

Application No.: 10/774,520  
 Amendment dated: August 7, 2006  
 Reply to Office Action of March 7, 2006  
 Attorney Docket No.: 21295.73 (H5749US)

This listing of claims will replace all prior versions and listings of claims in this application:

a.) Listing of Claims

1. (Currently Amended) A method for scanning a semiconductor wafer, comprising the steps of:
  - ~~scanning the wafer with a plurality of scan lines by~~ creating a relative motion between a camera and the wafer to scan the wafer along a plurality of scan lines;
  - acquiring images of regions on the wafer with the camera at a scanning speed in along a direction of one a current scan line,
  - changing the direction of scanning from a the current scan line to an opposite a new scan line that is to be scanned next, by:
    - ~~providing a deceleration of~~ decelerating the relative motion in the scan line in the direction of scanning in along the current scan line until that relative motion comes to a standstill, and
    - ~~providing acceleration~~ accelerating the relative motion in the direction of scanning along the opposite scan line direction until the scanning speed is reached, and
  - superimposing at least partially ~~the acceleration and subsequent deceleration of~~ a the steps of accelerating and decelerating the relative motion between the camera and wafer the until the new opposite scan line is reached.
2. (Currently Amended) The method as defined in Claim 1, further comprising:
  - starting wherein the decelerating and accelerating of the relative motion in the scan line direction and a perpendicular direction thereto begin, at the earliest, after imaging of a last region of the current scan line that is to be imaged;
  - and

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reaching the scanning speed ~~in~~ along the opposite scan line direction is ~~reached~~, and zeroing the a relative speed in the perpendicular direction ~~to the scan lines goes to zero~~, at the latest upon reaching a region that is to be imaged next.

3. (Currently Amended) The method as defined in Claim 1, further comprising:

starting ~~wherein the~~ decelerating and accelerating of the relative motion in the scan line direction and a perpendicular direction thereto ~~begin, at the earliest~~, after imaging of a last region of the current scan line ~~that is to be imaged~~; or

reaching the scanning speed in along the opposite scan line direction is ~~reached~~, and zeroing the a relative speed in the perpendicular direction ~~to the scan lines goes to zero~~, at the latest upon reaching a region that is to be imaged next.

4. (Currently Amended) The method as defined in Claim 1, wherein ~~the deceleration~~ decelerating in the direction of scanning scan line direction and ~~the acceleration~~ accelerating in the direction perpendicular to the scan lines begin simultaneously, and wherein accelerating the acceleration in the direction of scanning scan line direction and the deceleration decelerating in the direction perpendicular to the direction of scanning scan lines are completed simultaneously.

5. (Currently Amended) The method as defined in Claim 1, wherein ~~the deceleration~~ decelerating in the direction of scanning scan line direction begins ~~even~~ before imaging of a region that is the last to be imaged in the current scan line.

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6. (Currently Amended) The method as defined in Claim 1, wherein the scanning speed in the opposite scan line direction is reached ~~only~~ after a region to be imaged next in the ~~new~~ opposite scan line is reached.
7. (Currently Amended) The method as defined in Claim 1, ~~wherein the greatest further comprising reaching a highest~~ relative speed perpendicular to the scan lines ~~is reached upon reaching when~~ a relative speed of zero in the ~~scan line~~ direction of scanning is reached.
8. (Currently Amended) The method as defined in Claim 1, further comprising continuously modifying wherein the acceleration values upon during deceleration and acceleration in the direction of scanning along the current scan line and a direction perpendicular to the scan line ~~direction are modified~~ continuously.
9. (Original) The method as defined in Claim 1, wherein regions on the wafer adjacent to one another in the scan line direction are imaged with the camera.
10. (Original) The method as defined in Claim 9, wherein regions adjacent to one another on the wafer are imaged in such a way that their images partially overlap.
11. (Original) The method as defined in Claim 1, wherein the wafer is completely scanned, and images of the entire surface of the wafer are acquired.

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12. (Currently Amended) The method as defined in Claim 11, wherein regions adjacent to one another on the wafer (4) are imaged in such a way that their images partially overlap.

13. (Currently Amended) The method as defined in Claim 1, wherein the camera defines a rectangularly configured image field having a short side ~~on the short side of the image field~~ is oriented parallel to the scan line direction.

14. (Currently Amended) An apparatus for scanning a semiconductor wafer ~~in~~ along a plurality of scan lines comprising:

a camera for on-the-fly acquisition of images of a plurality of regions on the wafer disposed on a scanning stage,

means for generating a relative motion between the camera and the wafer thereby defining a scanning speed in a direction of the scan line,

a control device ~~for with which, upon a changeover from a current scan line to a new scan line that is to be scanned next, a deceleration of~~ decelerating the relative motion in the direction of the scan line is carried out during a changeover from a current scan line to a new scan line until that relative motion comes to a standstill, and a subsequent acceleration in an opposite direction of the scan line is carried out until the scanning speed is reached, and the control device being coupled to the scanning stage and to the camera serving to perform performs a superimposition of accelerating and decelerating of the on that relative motion with regard to acceleration and subsequent deceleration of a relative motion between the camera and the wafer perpendicular to the scan lines until the new scan line is reached.

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15. (Currently Amended) The apparatus as defined in Claim 14, wherein in ~~the context of the camera defines~~ a rectangularly configured image field of the camera, having a short side of the rectangle of the image field is oriented parallel to the scan line direction.

16. (Currently Amended) The apparatus as defined in Claim 14, wherein the camera is stationary and a the scanning stage is provided, on which the wafer (1) is placeable and securable and with which performs the relative motion relative with reference to a stationary the camera is performable.

17. (Currently Amended) An apparatus for scanning a semiconductor wafer comprising:

a camera for on-the-fly acquisition of images with an image field of a plurality of regions on the wafer, the wafer being divided into a plurality of defined scan lines;

~~a plurality of scan lines are defined and the wafer is divided into that plurality of scan lines;~~

means for scanning the wafer with a scanning speed in a scan line direction ~~as during a relative motion between the camera and the wafer, the image field of the camera has~~ having a rectangular configuration, ~~and with~~ a short side of the rectangular configuration of the image field is being oriented parallel to the scan line direction.